



Life after Vulnerability Assessments

What's Next?



So You Have Done an Assessment...

- ✓ Drinking water systems required by law depending upon population
- ✓ Wastewater systems not required but a good idea
- ✓ All types of formats
 - In-depth, comprehensive (RAM-W)
 - “Checklist” format (VSAT, NRW)

And Then You Submitted an Assessment...

- Final assessment for drinking water should be sent to Federal EPA in Washington
 - Bypasses the States
 - States only receive copy of the certificates

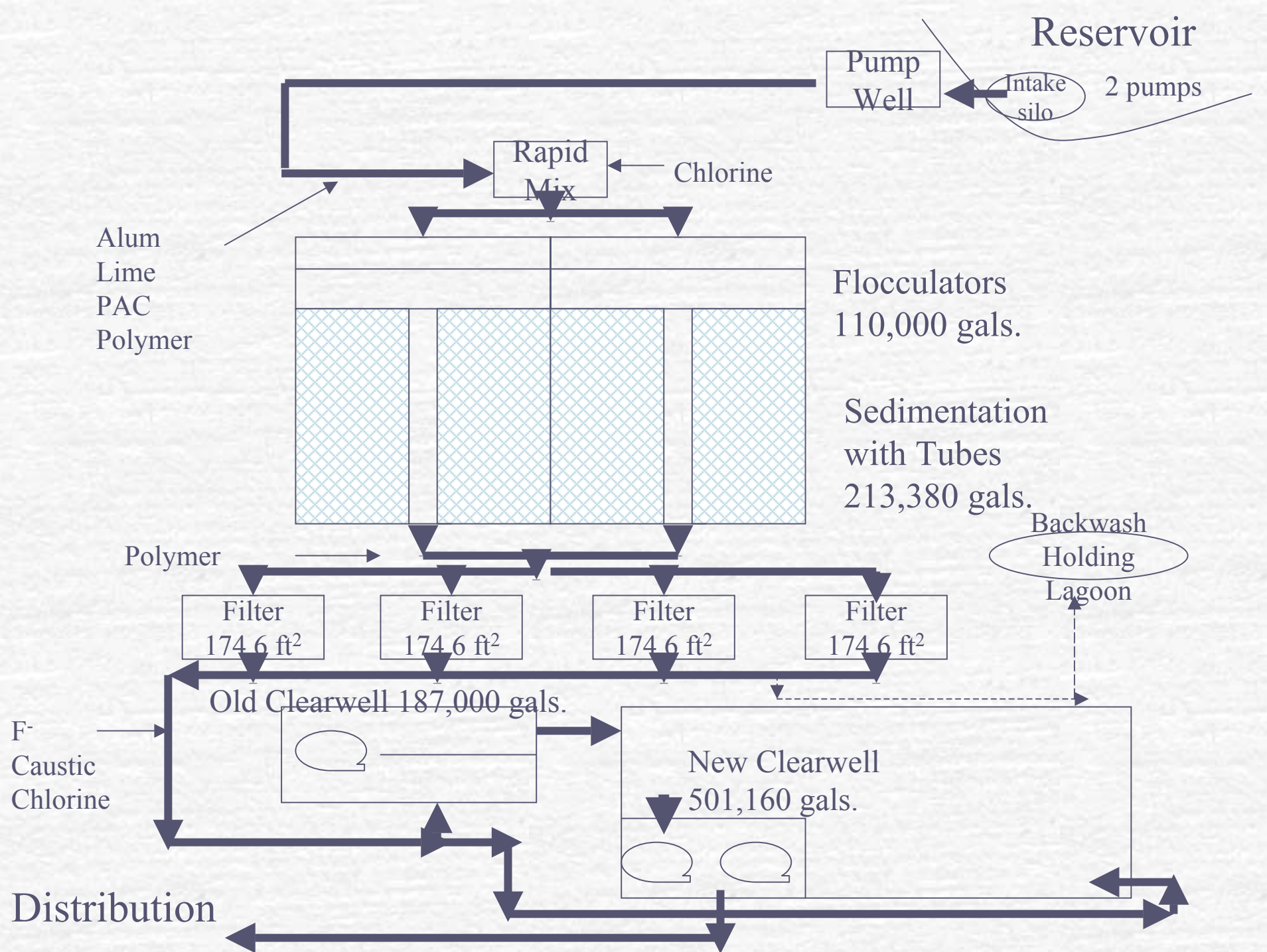
NOW WHAT!!

Just what do you do with that assessment?

- By law for drinking water systems, must be used to update your emergency response plans
- **Overall, must be used—plain and simple**
- If vulnerabilities are identified, do something to reduce the possibility of security breach
 - Emergency Response Plans
 - Internal SOPs

Example #1

- ✓ Surface water plant in remote county location 1 mile from recreational reservoir
 - Alum, caustic, gaseous chlorine
 - Full lab capability
- ✓ Manned for only 18 hours a day
- ✓ Currently fenced with gate, some lighting, one road in/out



Example #1

Vulnerabilities

✓ Vulnerabilities identified

- Remote location/Unmanned
- Gas chlorine
- Recreational reservoir

✓ Others??

Example #1

Remote Location/Unmanned

☛ Vulnerability

- Physical location
- Not manned 24/7
- Does response team know location and what's stored on site?

☛ Asset

- Remote location

☛ Solutions??

Example #1

Gaseous Chlorine

☞ Vulnerability

- Toxic deadly chemical

☞ Asset

- Maintain chlorine residual to combat potential pathogens or neutralize other contaminants

☞ Solutions??

Example #1

Recreational Reservoir

✓ Vulnerabilities

- Open to the public
- Marinas rent boats

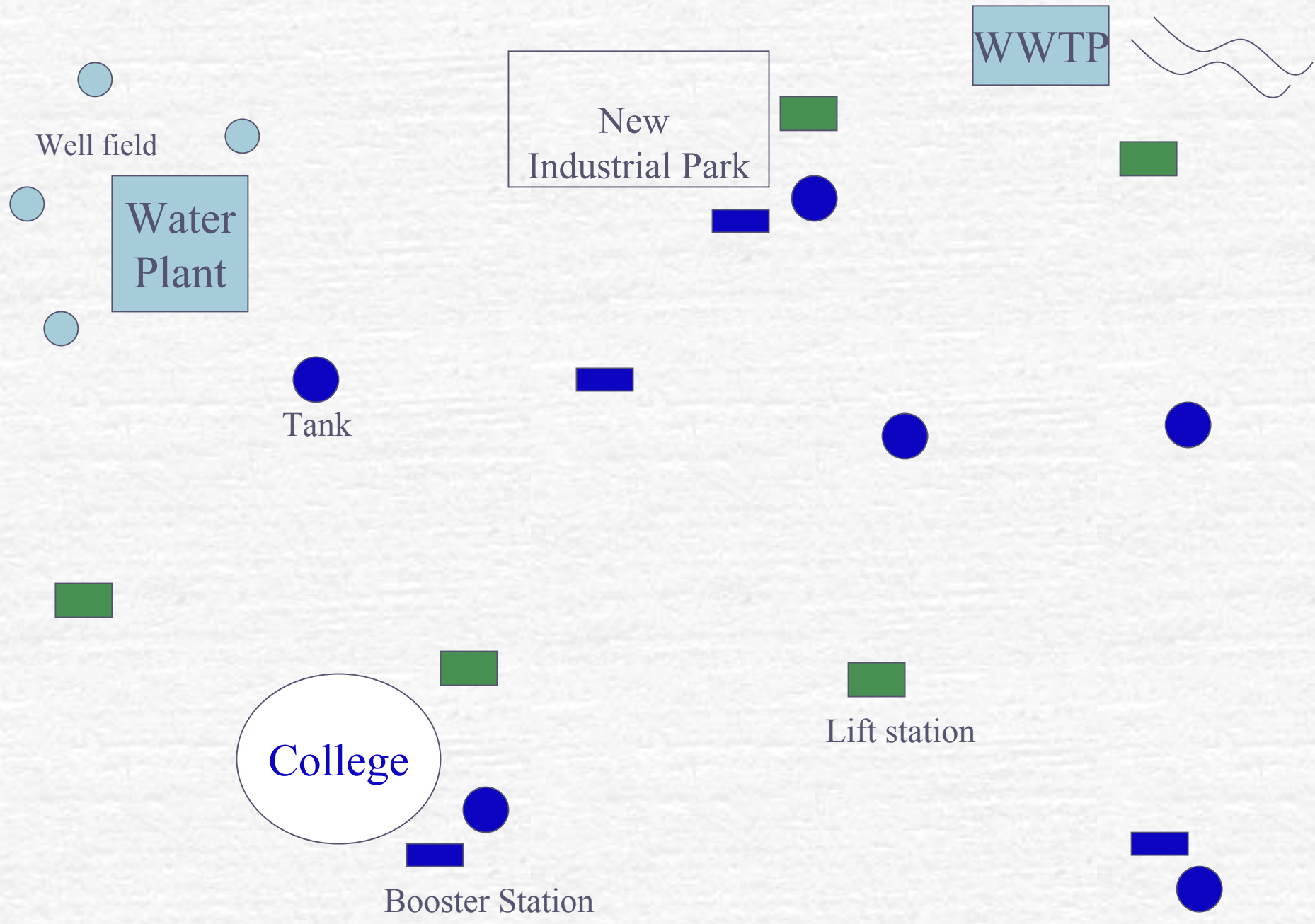
✓ Assets

- Large reservoir
- Local users

✓ Solutions??

Example #2

- ✓ Combined water/wastewater utility with large collection and distribution systems
 - Ground water as source; large river as discharge point
 - Stable water quality
 - Numerous tanks, pump stations
 - New industrial park
 - College town



Example #2

Vulnerabilities

✓ Vulnerabilities identified

- Large collection and distribution systems
- Remote tanks and pump stations
- New industrial park

✓ Others??

Example #2

Large Collection & Distribution

✓ Vulnerability

- Miles of pipe
- Thousands of connections
- Virtually impossible to totally protect

✓ Asset

- Buried

✓ Solutions??

Example #2

Remote Tanks and Pump Stations

✓ Vulnerabilities

- Location
- Accessibility (by both utility and public)

✓ Assets

- Location

✓ Solutions??

Example #2

Industrial Park

☛ Vulnerabilities

- Industrial
- Large connections

☛ Assets

- ??

☛ Solutions??

Example #3

- ✓ Small combined utility in large county
 - Aging plants and infrastructure
 - No upgrades planned
 - Very political
 - Operators leaving for larger systems

Example #3

Vulnerabilities

✓ Vulnerabilities identified

- Old facilities
 - Both in operations and security
 - Out-dated chemical feed
- Can't retain operators
- Politics

✓ Others?

Example #3

Aging Facilities

✓ Vulnerabilities

- May not be able to respond to contamination event due to age
- Little to no security

✓ Asset

- ??

✓ Solutions??

Example #3

Retaining Operators

☞ Vulnerability

- Lose experience and knowledge
- Does this point to a financial situation
- Or to a communication issue
- Possibly disgruntled employees

☞ Asset

- None

☞ Solutions??

Example #3

Politics

✓ Vulnerabilities

- Attitudes
- Status quo

✓ Asset

- Experience
- ??

✓ Solutions??

Example #4

Combined utility with extensive SCADA system

- SCADA interconnected with water and wastewater plants as well as office
- Telemetry on all tanks and pump stations

Example #4

Vulnerabilities

✓ Vulnerabilities identified

- Interconnected system
- Little in-house SCADA experience

✓ Others??

Example #4

Interconnected System

☛ Vulnerabilities

- Everyone has access
- Various types of business programs involved
- Web connections

☛ Assets

- Utility can easily monitor plants, systems
- Readily accessible data

☛ Solutions??

Example #4

In-house SCADA Experience

✓ Vulnerabilities

- Little to no internal security in place
- Reliance on outside vendor for maintenance and trouble-shooting
 - Backdoor access

✓ Asset

✓ Solutions??

Example #5

- ☞ Your facility, either water or wastewater
- ☞ Middle of June, no rain in 2 weeks
- ☞ F-4 tornados spotted in your vicinity
- ☞ Are you ready for this?
 - Emergency Response Plan

Example #5

Tornado

- ☛ What is your first action when you hear of the tornado outbreak?
- ☛ Who at your utility is involved in taking action?
- ☛ Do you know who to call if a water tank is damaged? If the electricity goes out? If the storm injures employees?
- ☛ Do you know how to shelter-in-place or evacuate properly?

Example #5

Tornado

- ✓ Need to plan prior to events
- ✓ Need to practice prior to events
- ✓ Emergency response plans cover all emergencies
 - Man-made
 - Natural
 - Technological
- ✓ Get to know your Local Emergency Planning Committee and response organizations

What to Do?

☛ Review and up-date your Emergency Response Plans

- Should be relevant to your utility
- Everyone should have input
- Is more than a list of phone numbers

☛ Practice the plan

- Take part in local security/emergency exercises (table-top or field)

THANK YOU
and
Have a Safe Trip Home

Questions?? Comments??

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